Inventive Performance Improvement of Integrated Optical Rate Sensor Using TIPS/TRIZ

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ABSTRACT

The Theory of Inventive Problem Solving (J II'S or also known as TRIZ) is a new scientific approach to innovative improvements of products and processes. This methodology was applied to inventive] y improve performance of an 1 ntegrated Optic Rate Sensor (101{ S). The problem was to improve angular rate sensitivity while 1 ight was lost due to an increased optical wave-guide length. Development of new innovative ideas was based on the understanding of the "J aws of Engineering System Evolution", "Inventive Principles" and "Effects" applied to solve this physical contradiction. Using the "Inventive Machine Expert System Software," a number of sixty-five potential new solutions were generated in a very short time. The number of new solutions generated by using '1 RIZ is considered to be over an order of magnitude higher than using the old methods. Two ideas have patent level quality.